

Claims

1. Synthetic enzymes for the production of coniferyl alcohol, coniferaldehyde, ferulic acid, vanillin and vanillic acid from eugenol.
2. Synthetic enzymes according to claim 1 selected from the group comprising:
 - a) eugenol hydroxylase,
 - b) coniferyl alcohol dehydrogenase,
 - c) coniferaldehyde dehydrogenase,
 - d) ferulic acid deacylase and
 - e) vanillin dehydrogenase.
3. DNA coding for the enzymes according to claims 1 and 2 as well as partial sequences and functional equivalents thereof.
4. Cosmid clones containing the DNA according to claim 3.
5. Vectors containing the DNA according to claim 3.
6. Microorganisms transformed with the DNA according to claim 3.
7. The use of the DNA according to claim 3 for the transformation of microorganisms.
8. The use of microorganisms according to claim 6 for the production of coniferyl alcohol, coniferaldehyde, ferulic acid, vanillin and vanillic acid.
9. A process for the production of coniferyl alcohol from eugenol, characterised in that the reaction is carried out in the presence of eugenol hydroxylase.
10. A process for the production of coniferaldehyde from coniferyl alcohol, characterised in that the reaction is carried out in the presence of coniferyl alcohol dehydrogenase.

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11. A process for the production of ferulic acid from coniferylaldehyde, characterised in that the reaction is carried out in the presence of coniferylaldehyde dehydrogenase.
12. A process for the production of vanillin from ferulic acid, characterised in that the reaction is carried out in the presence of ferulic acid deacylase.
13. A process for the production of vanillic acid from vanillin, characterised in that the reaction is carried out in the presence of vanillin dehydrogenase.

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